

one, or any combination of them, is sufficiently stable to warrant a segregation.

There is, therefore, no possible consistent line of demarkation between "typical" *multilineata* and the "var. *altonensis*," and the latter should be dropped, despite Dr. F. C. Baker's positive statement that it "is different from anything now living" (NAUTILUS 44: 22; 1930).

Furthermore, whether any of these "varieties" are recognized or not, the fact remains that the fossil forms of this species present no characters or variations which are not duplicated in its modern representatives in the same general region, and there is no warrant for the assumption that certain "varieties" are extinct or offer any indications of a different climate. The existing variations merely point to certain diversities in local conditions such as exist today in the same region, but are in no way indicative of general climatic differences.

NEW LYMNAEIDAE FROM THE UNITED STATES AND CANADA. II. MICHIGAN, MINNESOTA, AND MONTANA

BY FRANK C. BAKER

STAGNICOLA EMARGINATA BRYANTWALKERI nov. var. Pl. 7, Figs. 9.

Shell elongate-ovate, wide; whorls 7, rounded; sutures well impressed; spire sharply pointed, broadly conic, shorter than the aperture; body whorl rounded, bulbous; aperture roundly ovate; outer lip thin; inner lip wide, broadly reflected over the umbilical region either entirely closing the umbilicus or leaving a small chink; columella with distinct plait; parietal wall with wide callus which is sometimes raised to make the aperture continuous; color yellowish horn, spermaceti-like in some specimens; sculpture with coarse lines of growth often raised into ridges in senile specimens; spiral striae distinct; there are several raised spiral ridges on the lower part of the body whorl in some specimens.

<i>Length</i>	<i>Diameter</i>	<i>Aperture Height</i>	<i>Aperture Diameter</i>	
32.0 mm.	18.2 mm.	18.2 mm.	10.3 mm.	Holotype.
30.0 mm.	17.0 mm.	18.1 mm.	10.0 mm.	Paratype.
29.0 mm.	19.5 mm.	20.0 mm.	12.0 mm.	Paratype.

Type locality: Millecoquin Lake, Mackinac Co., Michigan, collected by Dr. Bryant Walker. Types: Museum Natural History, University of Illinois, No. 38973; Collection of F. C. Baker, No. 1766; Academy of Natural Sciences of Phila., No. 166257.

This striking race of *emarginata* was sent to the writer several years ago by Dr. Walker. It varies somewhat in height of spire and width of shell and aperture, but all have the peculiar pointed spire which is diagnostic of the race. It is most nearly related to *Stagnicola emarginata serrata* (Haldeman), specimens of which, from Higgins Lake, Roscommon Co., Mich., resemble it in general form, but differ in the form of spire which in *serrata* is wide and bluntly dome-shaped and the aperture is more rounded. The columellar plait is also more marked in *bryantwalkeri*. The new race somewhat resembles the *canadensis* race of *emarginata* in the form of the spire, but the body whorl in *canadensis* is narrower and flat-sided and the aperture is longer and narrower. I take great pleasure in dedicating this distinct form of *emarginata* to my friend and colleague Dr. Bryant Walker of Detroit, Michigan.

STAGNICOLA EMARGINATA MAGNIFICA nov. var. Pl. 7, Fig. 8.

Shell resembling the wide form of *bryantwalkeri* in general form but much exceeding that race in size; whorls 6; spire short and sharply pointed, body whorl very large, expanding abruptly from the spire whorls; aperture very large, rounded or roundly ovate; outer lip thin; inner lip thickened and reflected completely closing the umbilical region; there is a very heavy, ascending plait on the columella; parietal wall with a slight wash of callus; color yellowish horn; surface roughened by longitudinal plications which sometimes form heavy ridges; growth lines coarse and spiral lines well impressed.

<i>Length</i>	<i>Diameter</i>	<i>Aperture Height</i>	<i>Aperture Diameter</i>	
43.0 mm.	25.0 mm.	28.0 mm.	17.5 mm.	Holotype.
48.0 mm.	30.0 mm.	32.2 mm.	21.6 mm.	Paratype.

Type locality: Pelican Lake, Crow Wing Co., Minnesota, collected by W. A. Nason; Types: Museum Natural History, University of Illinois, No. Z38974; Collection F. C. Baker, No. 3544; Academy of Natural Sciences, Philadelphia, No. 166256.

This race is the giant of the *emarginata* group, exceeding the race called *vilasensis* F. C. Baker, which is also found in Pelican Lake (see Freshwater Mollusca of Wisconsin, I, pl. 16, figs. 21–26). *Magnifica* differs from all races of the *emarginata* group yet known in its size, pointed spire, large, wide aperture, and heavy columellar plait. It resembles *bryantwalkeri* but differs in its size, narrower and more pointed spire, larger aperture, and twisted columellar plait.

These two races are examples of the great variation of *emarginata* in the lakes of Minnesota, Wisconsin, and Michigan, the center of distribution of the group. Almost every large lake has its own peculiar form which is often quite distinct from the same species from nearby lakes. The race *canadensis* appears to be the oldest, geologically, occurring commonly in late Pleistocene deposits in Michigan and Wisconsin. Many of the races appear to have evolved very late in Post Glacial time. The ancestor of *emarginata* may possibly be *Stagnicola catascopium* which is found outside of the glaciated territory.

STAGNICOLA EMARGINATA SERRATA (Haldeman).

Limnea serrata Haldeman, Mon. F. W. Univalve Moll.,
Limnea, p. 12, pl. 2, figs. 6–8, 1842; Binney, L. & F. W.
Shells N. Amer., II, p. 52, fig. 78, 1865.

Limnaea angulata Sowb., Conch. Icon., XVIII, Lim., No. 47,
pl. 7, fig. 47, 1872.

There seems little doubt that the shell so common in Michigan and Wisconsin which has borne the name *angulata* Sowb. should be called by an earlier name, that of *serrata* Haldeman. Its type locality is "Northwest Territory," which at that time (1842) embraced the region now included in Minnesota and part of Wisconsin. Haldeman's figure can be duplicated by many specimens from both Michigan and Wisconsin, especially from Douglas Lake, Michigan, in which the body whorl has the heavy spiral lines described by Haldeman. In the author's Monograph of the Lymnaeidae (p. 409) *serrata* was made a synonym of typical *emarginata*, but wrongly so, the true *emarginata* being quite different in form of shell, aperture, and umbilical region.

FOSSARIA OBRUSSA RODECKI var. nov. Pl. 7, figs. 7.

Shell small, elongated, narrow; spire and aperture about equal in length; whorls 5-5½, loosely coiled, rounded, with distinct sutures; spire sharply pointed, somewhat scalariform in many specimens; body whorl flattened, elongated; aperture long ovate, narrow, wider at lower part; outer lip thin without varix; inner lip narrow, triangular, reflected over umbilical region leaving a small umbilical chink; columella with slight twist resembling a plait; a thin wash of callus on parietal wall; surface shining, sculpture of fine growth lines without spiral lines; color yellowish horn.

<i>Length</i>	<i>Diameter</i>	<i>Aperture Height</i>	<i>Aperture Diameter</i>	
10.0 mm.	4.1 mm.	5.0 mm.	2.0 mm.	Holotype.
9.0 mm.	3.6 mm.	4.1 mm.	1.6 mm.	Paratype.

Type locality: Swan Lake, Montana, collected by Junius Henderson and Hugo G. Rodeck. Types: Museum of Natural History, University of Illinois, No. Z38975; Baker collection, No. 3545; Academy of Natural Sciences of Philadelphia, No. 166255.

This interesting little *Fossaria* is another form discovered by that indefatigable worker, Professor Junius Henderson. It appears to be a marked variety of *obrussa* characterized by its narrow shell, long, narrow and pointed spire and narrow aperture. Typical *obrussa* occurs in Montana, Idaho, and Utah, but differs uniformly in its wider shell, aperture, and spire. Hannibal's *cooperi* from California has a rounded aperture, more flattened whorls and a wider inner lip which is not triangular but flatly, evenly rounded, emarginating the umbilical opening. *Fossaria exigua* has a much rounder aperture, more rounded whorls and a less acute spire. The name is in honor of Mr. Hugo G. Rodeck, Curator of the University of Colorado Museum.

SOME SHELLS FROM THE NORTH CAROLINA "BANKS"

BY HORACE G. RICHARDS
New Jersey State Museum, Trenton, N. J.

Several times during the last few years the writer has had occasion to collect shells from certain of the beaches along the